



Name _____ Date _____

Practice: For use after Lesson 2.6, Algebra 2 with Trigonometry

WS #8

Absolute Value Equations

Solve and check. If an equation has no solution, so state.

1. $|2x| = 10$ _____

2. $|6x| = 24$ _____

3. $|-3x| = 9$ _____

4. $|-7x| = 42$ _____

5. $|x - 1| = 3$ _____

6. $|x - 5| = 11$ _____

7. $|x + 4| = 5$ _____

8. $|x + 7| = 0$ _____

9. $|2x - 4| = 14$ _____

10. $|3x - 2| = 10$ _____

11. $|4x + 1| = 9$ _____

12. $|5x + 6| = 11$ _____

13. $2|x + 1| = 8$ _____

14. $3|x + 7| = 36$ _____

15. $5|x - 4| = 15$ _____

16. $4|x - 3| = 12$ _____

17. $|3x - 9| = -18$ _____

18. $|2x + 1| = -5$ _____

19. $|5y + 7| + 3 = 35$ _____

20. $|2x - 9| + 4 = 31$ _____

21. $|7x - 14| - 5 = 16$ _____

22. $-|4x + 12| = 2$ _____

23. $3|5 - 2x| = 21$ _____

24. $|3x + 14| = 7x + 2$ _____

25. $3|3x + 7| = 3x + 9$ _____

26. $6|9 - 5x| = 30x - 48$ _____

27. $\frac{1}{3}|2x + 1| = 4x + 2$ _____

28. $\frac{1}{5}|3x + 5| = 6x + 12$ _____

Applications

Solve.

29. **History** Courtney is writing a history report on the fourth century B.C. She uses negative numbers to indicate the dates before the year zero. Lengths of time are indicated by absolute values. What was the final age of an emperor who was born in -363 and began to reign in -332 if he reigned for 40 yr? _____

MIXED PRACTICE

Solve.

30. $|2x - 8| = 4$ _____

31. $5|x - 2| = 20$ _____

32. $8 + 5x > 2x - 10$ and $3(1 - 2x) + 3 < 54$ _____